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ABSTRACT

This issue describes the state of reading and literacy in the United States from kindergarten into adulthood. Data from a number of sources make it possible to draw a picture of literacy at all educational levels. The most striking and troubling observation is the wide differentials between racial and ethnic groups, beginning in kindergarten and continuing through school and into adulthood. With the strong associations between literacy and success in the economy, reducing these differentials becomes critical in equalizing opportunity. In international terms, the performance of U.S. students is about average, or mediocre, but the United States is the most unequal of the tested countries, with a wider spread in literacy proficiency than the other developed countries assessed. It is as important to reduce the variability as it is to increase the average. School-based reading proficiency and adult literacy proficiency are not the same; reading to know is not the same as reading to do. Reading to do, however, is rewarded in the labor market. The high priority assigned to reading at the beginning of this decade is altogether warranted. Thirteen selected resources on literacy are described. (SLD)

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ETS POLICY NOTES

News from the ETS Policy Information Center

VOLUME 11, Number 2 Spring 2003

Reading and Literacy in America

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ETS POLICY NOTES

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Reading and Literacy in America

It might be thought that the world's richest nation, with a history of public education tracing back over 150 years, would have reached a level of comfort with the literacy of its high school students and young adults. Yet reading is at the top of the agenda of U.S. policymakers' school reform efforts. Employers put the reading and writing skills of job applicants at the top of their list of dissatisfactions about young people entering their employment offices, and throughout the 1990s the charge cropped up from time to time that the U.S. is turning out high school graduates who cannot read their diplomas (a real stretching of whatever facts such statements might be based on).

It is a fact that about 3 in 10 students in the U.S. do not make it through high school to receive a regular diploma. And of the high school graduates who go on to college, about the same proportion (3 in 10) must take remedial courses before they are ready to do college work. The popular understanding is often conveyed in cartoons, like one showing a mother reporting to her husband a conversation with their son, who was now enrolled in college: "Isn't it wonderful, dear? Johnny says he is learning to read."

To be sure, some exaggeration exists in various descriptions of the adequacy of our nation's reading skills, but there is enough hard evidence to justify concern. In this issue of *ETS Policy Notes*, the state of reading and literacy from kindergarten into adulthood will be described. In addition, a list of ETS resources is provided for those interested in the topic of literacy.

Elementary School

For three decades, we have known from the National Assessment of Educational Progress (NAEP) how well fourth-, eighth-, and twelfth-grade students read, but until recently we knew little about the reading skills of younger children. A new longitudinal assessment by the Department of Education will fill this need; the study began with kindergartners in the fall of 1998 and will follow these same students, assessing them periodically, through fifth grade.

It is comforting to see the progress that these young students make in school. As they enter kindergarten, 31 percent know the beginning sounds of words, rising to

98 percent by the spring of the first grade. In the same period, just 3 percent could recognize words on sight at the time of school entry, rising to 83 percent.

Disturbing, however, is the finding that the large differentials in reading scores that we see by the fourth grade are already there when children enter kindergarten. While 71 percent of White kindergartners—and 80 percent of Asian kindergartners—could recognize letters of the alphabet when they started in the fall, just 59 percent of Black and 51 percent of Hispanic kindergartners could do so.[1]

According to NAEP, in the year 2000, 63 percent of fourth graders could perform at least at the *basic* level of reading proficiency. At this level, students can demonstrate an understanding of the overall meaning of what they read. But only 32 percent are *proficient* at reading—a level where students can go beyond understanding and extend the ideas in the text by making inferences, drawing conclusions, and making connections to their own experiences. There was little change in this statistic from 1992 to 2000, in what can be called a decade of education reform.

In terms of race and ethnicity, 40 percent of White fourth graders were proficient in reading, compared with 46 of Asian, 12 percent of Black, and 16 percent of Hispanic fourth graders. In statistical terms of "standard deviations," these differentials are of a similar magnitude to those found in kindergarten and first grade. The differentials present at the beginning persist through the years of public education.

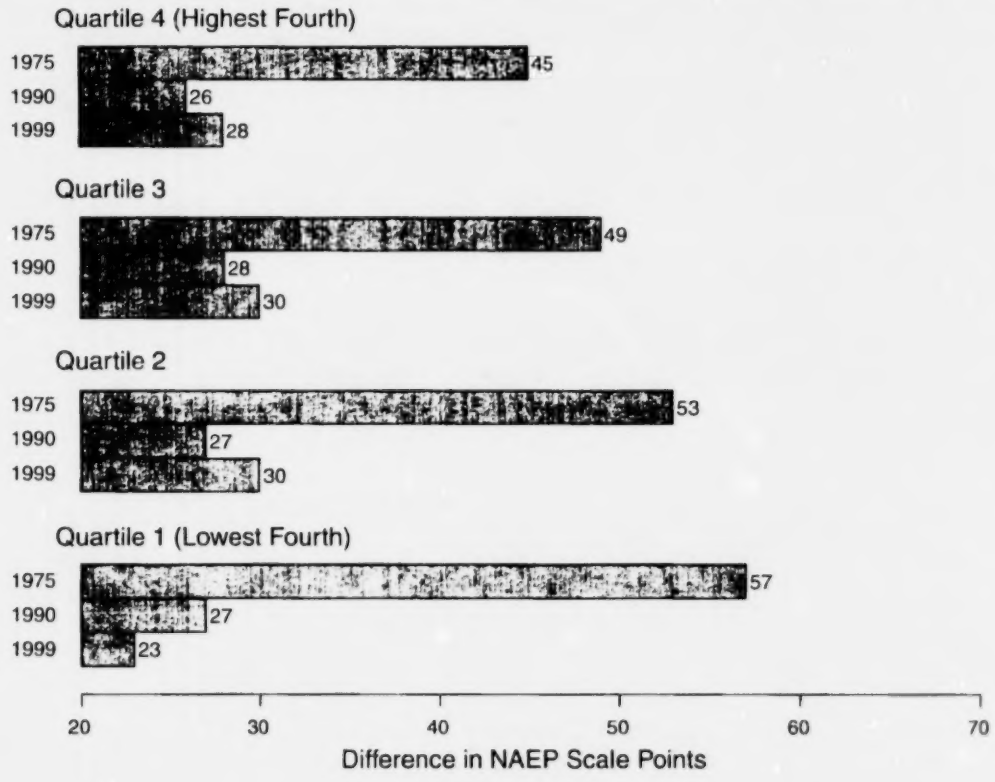
NAEP has measured trends in fourth-grade reading from 1992 to 1998 for 36 states. Average scores improved in seven states, were unchanged in 26, and declined in three. When students are divided into four quartiles based on their scores, the average score of students in the bottom quartile (lowest scoring) declined in 18 states, while average scores rose for those students in the top quartile in 12 states. The result was an enlargement of the gap between top- and bottom-scoring students in 16 states. The gap also widened between White and minority (Black and Hispanic) students in six states, and narrowed in only one state.

High School

Long-term NAEP trend data in reading are available going back to 1975. Figure 1 shows how much the average scores of minority and majority 17-year-old students differed in 1975, 1990, and 1999. From 1975 to 1990, this gap was cut by about half. However, progress halted, and there were no statistically significant changes in the gaps between 1990 and 1999. This is about the same picture as for fourth graders in the 1990s.

[1] See Richard J. Coley, *An Uneven Start: Indicators of Inequality in School Readiness*, Policy Information Report, Policy Information Center, Educational Testing Service, March 2002. www.ets.org/research/pic/unevenstart.pdf

Figure 1- Differences Between White and Minority NAEP Reading Scores, by Quartile, Over Time



Source: Unpublished data from special analyses conducted by Educational Testing Service.

How do U.S. high school students compare internationally? Results available from the Program for International Student Assessment (PISA) are displayed in Table 1. The analysis is for 27 participating industrialized countries of the Organization for Economic Cooperation and Development (OECD) and for four non-OECD countries assessed in 2000. The U.S. score was similar to the average of the 27 OECD countries, lower than the average scores in three countries, and higher than those in seven countries.

Reading and Literacy

In school, the term "reading competency" is used, and that is what NAEP measures. For adults, the term "literacy" rather than reading is used in national assessments, such as the National Adult Literacy Survey conducted in 1992 and repeated in 2002. As the terms are defined, they are related but not the same. Over-simplified, reading means to comprehend what a text says, while literacy is the ability to solve everyday problems that are delivered

Table 1 - International Reading Literacy: Average Reading Literacy Score of 15-Year-Olds, by Country, 2000

Average score relative to the United States	Country and score					
Significantly higher	Finland	546	Canada	534	New Zealand	529
Not significantly different	Australia	528	Iceland	507	Spain	493
	Ireland	527	France	505	Czech Republic	492
	Korea, Republic of	525	Norway	505	Italy	487
	United Kingdom	523	**United States**	504	Germany	484
	Japan	522	*International average*	500	Liechtenstein	483
	Sweden	516	Denmark	497	Hungary	480
	Austria	507	Switzerland	494	Poland	479
	Belgium	507				
Significantly lower	Greece	474	Latvia	458	Mexico	422
	Portugal	470	Luxembourg	441	Brazil	396
	Russian Federation	462				

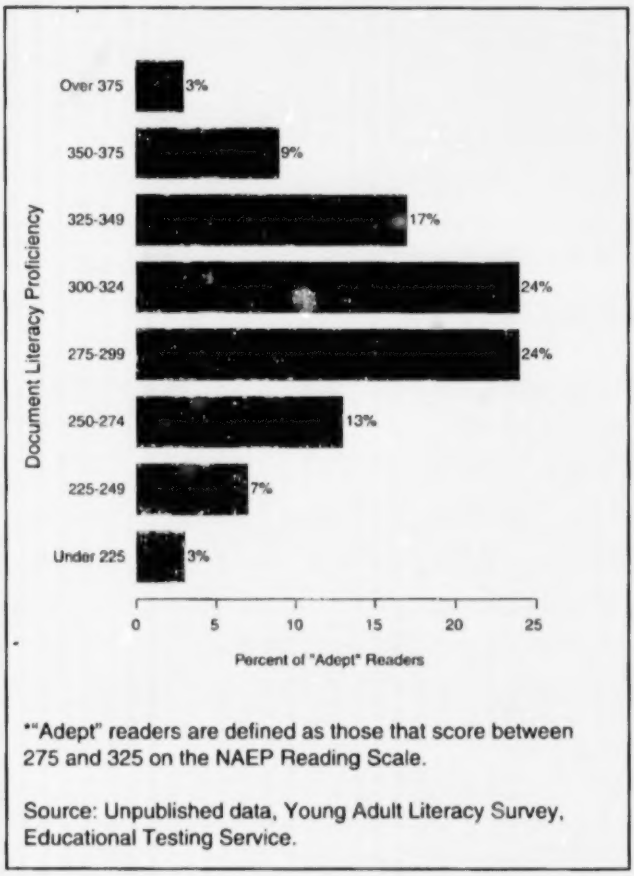
*The international average is the average of OECD countries only and thus excludes Brazil, Latvia, Liechtenstein, and the Russian Federation.
Source: National Center for Education Statistics, *The Condition of Education, 2002*.

through the printed word. (Large-scale literacy studies have measured proficiency in prose, document, and quantitative literacy.) Only once have the same individuals been measured both ways, in the Young Adult Literacy Survey conducted in 1985 by Educational Testing Service under contract with the U.S. Department of Education. This was the forerunner of the large-scale assessments of all adults 16 years of age and over in 1992 and 2002. The Young Adult Literacy Survey is important for having included a NAEP reading test as well as a test of prose, document, and quantitative literacy. For the first time, the two aspects of reading and literacy could be compared.

Figure 2 shows how readers found to be "adept" in school-type reading on the NAEP assessment performed on the test of document literacy. "Adept" readers in this NAEP assessment were those who were able to "understand, summarize, and explain relatively complicated information." Just 2 in 5 in-school 17-year-olds were considered to be "adept" readers in the regular NAEP assessment, while over half the young adults aged 21 to 25 were classified as such.

Only about 12 percent of these adept readers performed at level 350 or higher in the Young Adult Literacy Survey (on a document literacy scale of 0 to 500); these individuals were able to perform tasks such as using six features of a bus schedule to get to a particular place on time. Sixty-five percent were in the 275 to 349 range, able to do tasks ranging from using a chart to locate an approximate grade of sandpaper with given specifications (high end of the range) to using an index from an almanac (low end of the

Figure 2 - Document Literacy of Young Adult "Adept" Readers,* 1986



*"Adept" readers are defined as those that score between 275 and 325 on the NAEP Reading Scale.

Source: Unpublished data, Young Adult Literacy Survey, Educational Testing Service.

range). Twenty-three percent of these "adept" school readers scored below the 275 level, characterized by the ability to perform only relatively simple tasks, such as matching an item on a shopping list to grocery coupons.

These results show that young people who did well in school-based reading had difficulty applying their skills to everyday literacy tasks. Although this may seem puzzling, it is important to recall the differences between school reading and the measure of adult literacy. In school, students are taught to read for understanding of the information the text conveys, which is certainly important in the workplace. However, employers, when they hire young people, are considering more than that when they complain that employees "can't read." They are looking at employees' ability to perform tasks that are conveyed to them through print. This is the kind of performance that is measured in the national literacy surveys, through measuring skills in tasks delivered in prose, or through interpreting documents, or in performing quantitative tasks that are described in prose.

Recently, the *High Schools That Work* program, operated in 25 states by the Southern Regional Education Board, set forth its goals for reading. The goals are closer to the literacy definitions used in the large-scale adult literacy surveys than to school reading: "Students who meet the *High Schools that Work* performance goal in reading are able to seek and use information from manuals, journals, periodicals and other documents; use information from several sources; identify and solve stated problems; recognize limitations in available information; and use maps, legends, symbols and schedules to solve real life problems."

Likewise, the test to be used next year in the new General Education Development (GED) certificate program will measure skills akin to those measured in the literacy assessment. Expectations for students appear to be changing—indeed rising—over time.

Adult Literacy

The most recent comprehensive information on literacy in the United States was from the 1992 National Adult Literacy Survey described above; a new assessment was fielded in 2002. Given that NAEP reading scores have been practically unchanged since 1990, it is not likely that there will be large changes in young adult literacy from 1992 to 2002. Yet, as can be seen in Figure 2, school reading and literacy are not synonymous. Data from the 2002 survey may reveal unexpected trends.

In 1992, the mean prose literacy score of 16-to 25-year-olds was 278 (again on a 0 to 500 scale). That put the average young adult at the very bottom of Level 3 (out of 5 levels); Level 3 scores range from 276 to 325. An example of a literacy task that characterizes this level of proficiency is writing a brief letter explaining an error made on a credit card bill. The National Education Goals Panel identified Level 3 as the minimum necessary to succeed in the modern economy; yet the average young adult barely makes it into this level.

Results from a recent international literacy assessment highlight the problem from a comparative point of view. The U.S. story is captured in the title of the report, *The Twin Challenges of Mediocrity and Inequality: Literacy in the U.S. from an International Perspective.*[2] Of the 20 high-income countries assessed, the U.S. is rarely among the best performers—and often among the worst. Young adults in the U.S. aged 16 to 25 tied for 14th place in prose, document, and quantitative literacy. In terms of a measure of unequal literacy proficiency—the spread, or variability in scores from the top to the bottom—the U.S. was first in prose (most unequal) and second in document and quantitative literacy.

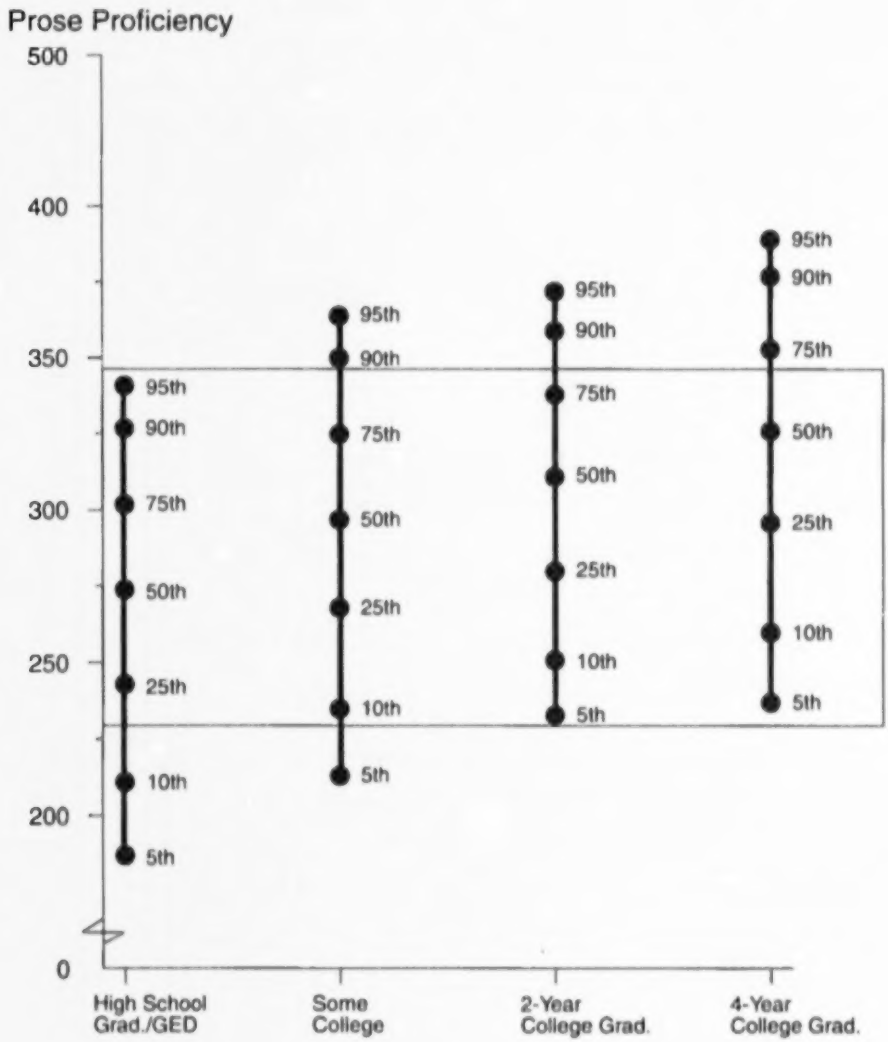
Averages can be therefore deceiving; variability is huge in the U.S., and clearly we do not serve all groups well. According to National Adult Literacy Survey data, skills vary widely at every age group and every level of formal education. This is illustrated in Figure 3, which shows both how wide the distribution of prose proficiency is at each level of education and how much overlap there is in these distributions. The degree of overlap is highlighted by the shaded area in the graph.

The Difference Literacy Makes

The level of prose, document, and quantitative literacy is a powerful predictor of how well one does in the labor market. The differences in literacy proficiency that we see by race and ethnicity translate directly into inequality in labor market status. This is illustrated in Figure 4. For example, the average proficiency of Black Americans is 237 compared to 286 for White Americans. While the average for Whites is just below the average for people in sales occupations (293), the Black average of 237 is below the average for all laborers, and four Hispanic population groups are lower than the Black average.

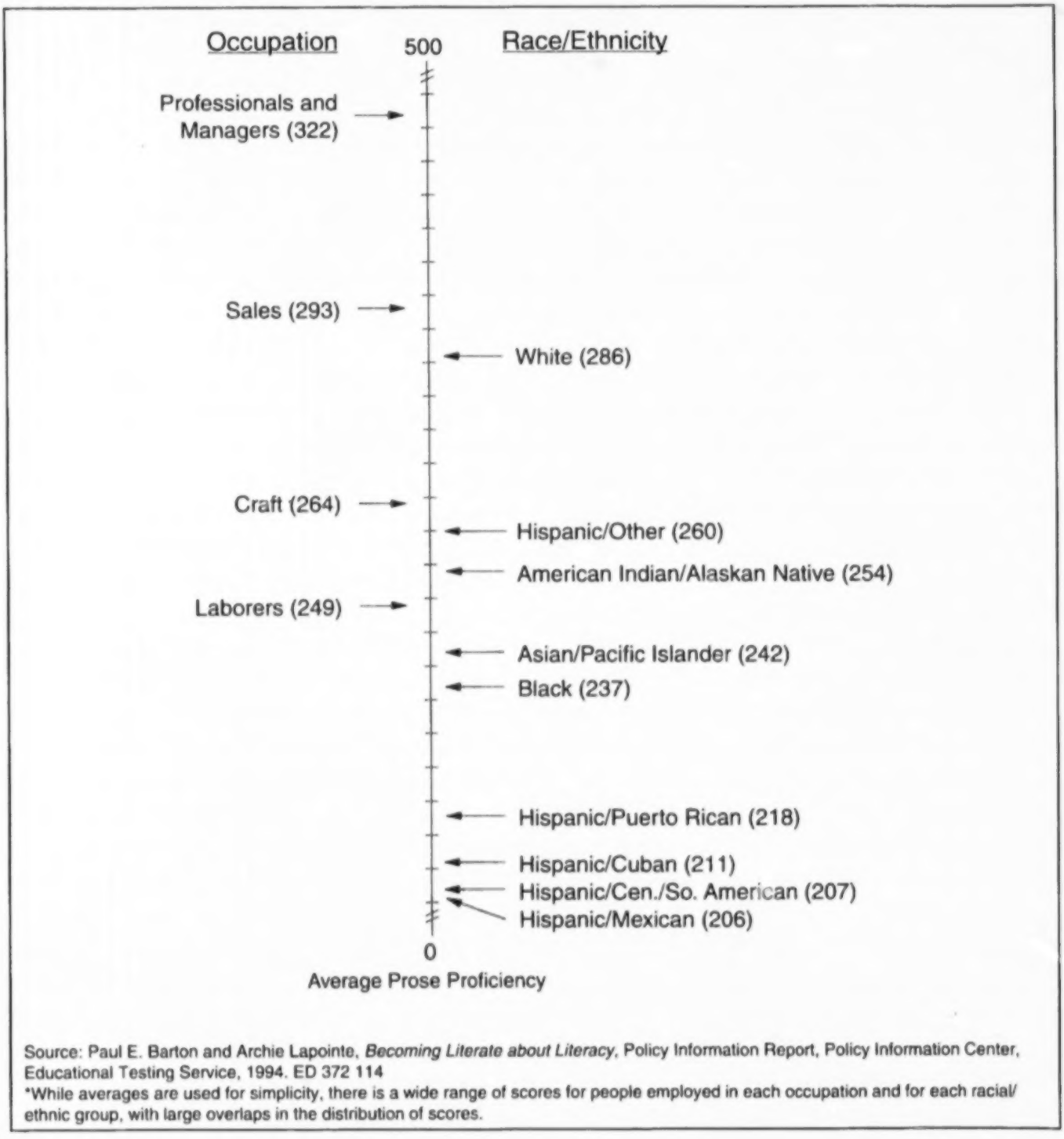
[2] Andrew Sum, Irwin Kirsch, and Robert Taggart, *The Twin Challenges of Mediocrity and Inequality: Literacy in the U.S. from an International Perspective,* Policy Information Report, Policy Information Center, Educational Testing Service, February 2002. www.ets.org/research/pic/twinchall.pdf

Figure 3 - Percentile Distribution of Prose Literacy Proficiency by Education Level, 1992



Source: Paul E. Barton and Archie Lapointe, *Learning by Degrees: Indicators of Performance in Higher Education*, Policy Information Center, Educational Testing Service, 1995. ED 379 323

Figure 4 - Prose Literacy Average Proficiency by Race/Ethnicity Compared with the Average Prose Literacy Proficiency in Selected Occupations, 1992



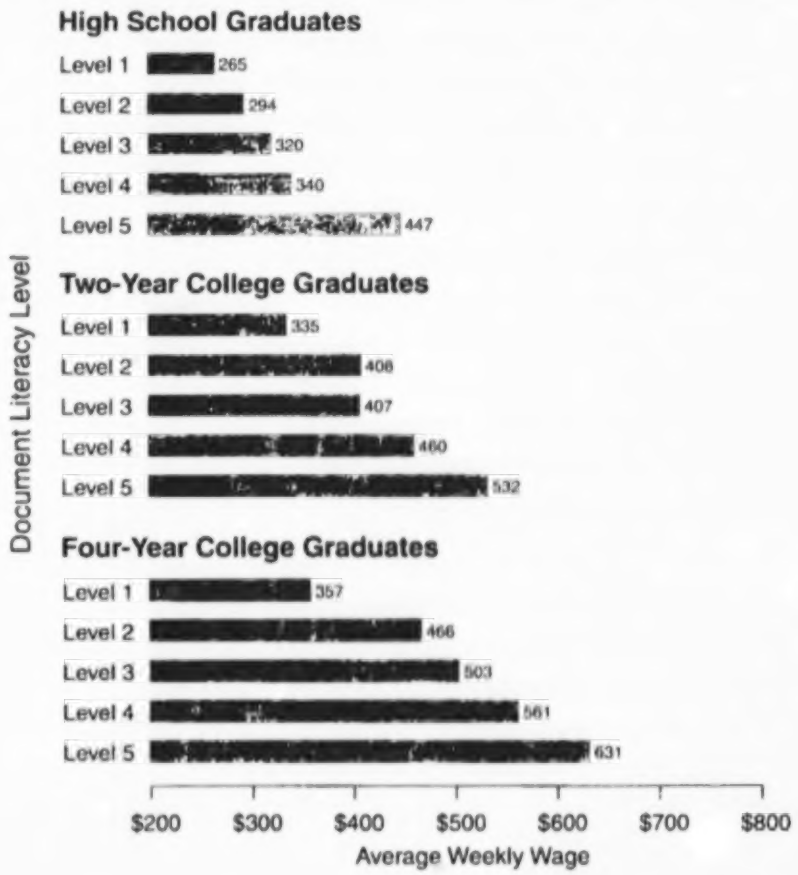
Source: Paul E. Barton and Archie Lapointe, *Becoming Literate about Literacy*, Policy Information Report, Policy Information Center, Educational Testing Service, 1994. ED 372 114

*While averages are used for simplicity, there is a wide range of scores for people employed in each occupation and for each racial/ethnic group, with large overlaps in the distribution of scores.

The market rewards literacy skills: whatever the level of education, weekly wages increase as the level of literacy advances. This relationship is shown in Figure 5. The average high school graduate at Level 4 earns $75 per week more than at Level 1. Also, it is true that at any level of literacy, those who have more education earn substantially more. But the average two-year college graduate at Level 4 in literacy proficiency earns about the same as the average person at Level 2 who is a four-year college graduate. As was seen in Figure 3, the distribution of literacy scores is wide at any level of formal education.

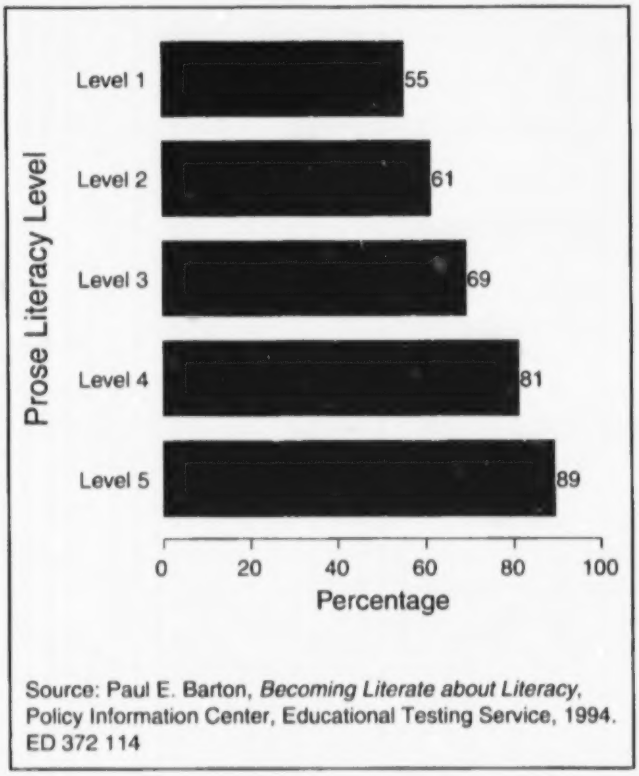
The strong effects of literacy proficiency are not confined to the labor market. As can be seen in Figure 6, while only just over 5 in 10 adults who scored at Level 1 had voted in the last five years, 9 in 10 of those at Level 5 had voted.

Figure 5 - Document Literacy Proficiency and Weekly Wages, by Educational Attainment, 1992



Source: Paul E. Barton and Archie Lapointe, *Learning by Degrees: Indicators of Performance in Higher Education*, Policy Information Center, Educational Testing Service, 1995. ED 379 323

Figure 6 - Percentage of Adults Who Voted in a National or State Election in the Past Five Years, by Literacy Level



Source: Paul E. Barton, *Becoming Literate about Literacy*, Policy Information Center, Educational Testing Service, 1994. ED 372 114

Citizenship seems closely correlated with literacy proficiency. Literate people stay better abreast of current events; at Level 1, 68 percent get information about current events from newspapers and magazines, compared with 92 percent at Level 5.

Some Observations

The most striking and troubling fact about reading and literacy in the U.S. is the wide differentials between racial and ethnic groups, beginning in kindergarten and continuing through school and into adulthood. With the strong associations between literacy and success in the economy, reducing these differentials becomes critical in equalizing opportunity. In international terms, the performance of U.S. students is about average, or mediocre, according to an ETS report cited earlier. But the U.S. is clearly the most unequal, with a wider spread in literacy proficiency than the other developed countries assessed. Thus, it is as important to reduce the variability as it is to raise the average. Nothing that happened in the 1990s resulted in an improvement in proficiency or in the unequal distribution of proficiency. In fact, inequality widened in many states in the 1990s, a fact to be contemplated in view of the goal of the No Child Left Behind Act to reduce it.

A close look at school-based reading proficiency and adult literacy proficiency reveals that they are different—though obviously related—skills. Reading to know is not the same thing as reading to do. We do know that reading to do is well rewarded in the labor market. With all the emphasis in school on reading to know, it would be prudent to examine carefully the benefits of equipping more young people with proficiencies in prose, document, and quantitative literacy. Teaching one does not preclude teaching the other; we could benefit from more investigation into the best ways to equip students for what they will face in school and work. And we need to remember that it is not just a matter of preparing students for high-performance workplaces, but a general capability to function adequately in more traditional workplaces as well. All in all, the high priority assigned to reading at the beginning of this decade seems altogether warranted.

This article was written by Paul E. Barton.

Selected ETS Resources on Literacy

Note: Hard copies of these reports are not available. They can be downloaded from the WWW or ordered from ERIC.

From the ETS Policy Information Center

The Twin Challenges of Mediocrity and Inequality: Literacy in the U.S. from an International Perspective, by Andrew Sum, Irwin Kirsch, and Robert Taggart, Policy Information Report, February 2002,. This report compares the literacy of U.S. adults with the literacy of adults in other high-income countries. www.ets.org/research/pic/twinchall.pdf

What Jobs Require: Literacy, Education, and Training, 1940-2006, by Paul Barton, Policy Information Report, January 2000. Assembles the available information on past and future trends in employment and on the educational requirements of jobs. ED 439 136. www.ets.org/research/pic/jobs.pdf

How Teachers Compare: The Prose, Document, and Quantitative Skills of America's Teachers, by Barbara Bruschi and Richard Coley, Policy Information Report, March 1999. Uses data from the National Adult Literacy Survey (NALS) to describe the prose, document, and quantitative literacy levels of the nation's teachers and compares them to the literacy levels of other adults. ED 429 106. ftp.ets.org/pub/res/204911.pdf

Occupations and the Printed Word, A Policy Information Workbook, August 1997. Assembles information on the literacy and basic education requirements of occupations from a variety of sources. Offers different approaches to determining occupational requirements in terms of the use of the printed word. ED 414 310.

Literacy and Dependency: The Literacy Skills of Welfare Recipients in the United States, by Paul E. Barton and Lynn Jenkins, Policy Information Report, 1995. The prose, document, and quantitative literacy levels of the welfare population are described. The report also summarizes the results of related research on efforts to raise the literacy levels of the welfare population. ED 385 775.

Learning by Degrees: Indicators of Performance in Higher Education, by Paul Barton and Archie Lapointe, Policy Information Report, 1994. This report describes the limited evidence that we have about the performance of higher education graduates and how we can develop better performance indicators. Discussion covers the Graduate Management Admissions Test, the 1992 National Adult Literacy Survey, and syntheses of small-scale research projects. ED 379 323.

Beoming Literate About Literacy, by Paul E. Barton, Policy Information Report, 1994. This brief volume provides highlights from the National Adult Literacy Survey, including actual examples of what tasks adults can perform at each level of prose, document, and quantitative literacy. Results are also presented for demographic subgroups of adults. ED 372 114.

Training to Be Competitive: Developing the Skills and Knowledge of the Workforce, by Paul E. Barton, Policy Information Report, 1993. Describes the extent of worker training in the U.S. and the literacy levels of job seekers. It also describes the major policy options available for increasing this investment in light of conclusions of major study commissions that the current level is inadequate to enable the U.S. to raise productivity and improve its competitive position in world markets. ED 359 227.

ETS Policy Notes, "Literacy: Economic Key to the New Millenium, by Richard J. Coley. This issue is a condensation of *Literacy, Economy and Society: Results of the First International Adult Literacy Survey*, published by the Organization for Economic Cooperation and Development and Statistics Canada. ftp://ftp.ets.org/pub/res/ials.pdf

From the Center for Global Assessment

Adult Literacy in America, by Irwin S. Kirsch, Ann Jungeblut, Lynn Jenkins, and Andrew Kolstad, National Center for Education Statistics, September 1993. The report provides the first results from the National Adult Literacy Survey, providing a portrait of the condition of literacy in the U.S. ED 358 375. http://nces.ed.gov/naal/resources/resources.asp#national

The International Adult Literacy Survey (IALS): Understanding What Was Measured, by Irwin Kirsch, Educational Testing Service, RR-01-25, December 2001. The report offers a framework for developing literacy tasks and understanding the meaning of the resulting literacy proficiencies of adults in participating countries. http://www.ets.org/research/dload/RR-01-25.pdf

Profiling the Literacy Proficiencies of JPTA and ES/UI Populations, Final Report to the Department of Labor, by Irwin Kirsch and Ann Jungeblut, September 1992. This report profiles the literacy proficiency of the 20 million participants in the U.S. Department of Labor programs that target people who are unemployed or seeking jobs. ED 361 484. http://wdr.doleta.gov/opr/FULLTEXT/92-profilinglit.pdf. The version of this report prepared for the general public is *Beyond the School Doors: The Literacy Needs of Job Seekers Served by the U.S. Department of Labor*, by Irwin S. Kirsch, Ann Jungeblut, and Anne Campbell, U.S. Department of Labor, September 1992. ED 349 460. http://wdr.doleta.gov/opr/FULLTEXT/1992_03.pdf

Literacy Behind Prison Walls, by Karl O. Haigler, Carolina Harlow, Patricia O'Connor, and Anne Campbell, National Center for Education Statistics, October 1994. Using data from the National Adult Literacy Survey, this report provides an in-depth look at the literacy skills of prisoners incarcerated in state and federal prisons. ED 375 325. http://nces.ed.gov/naal/resources/resources.asp#national

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